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Translation

PCT/EP2003/014715

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P2908/PCT	**FOR FURTHER ACTION**	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/EP2003/014715	International filing date (*day/month/year*) 22 December 2003 (22.12.2003)	Priority date (*day/month/year*) 23 December 2002 (23.12.2002)
International Patent Classification (IPC) or national classification and IPC B29C 45/73		
Applicant PRIAMUS SYSTEM TECHNOLOGIES AG		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 7 sheets, including this cover sheet.

   ☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of 6 sheets.

3. This report contains indications relating to the following items:

   - I ☒ Basis of the report
   - II ☐ Priority
   - III ☒ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV ☐ Lack of unity of invention
   - V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - VI ☐ Certain documents cited
   - VII ☐ Certain defects in the international application
   - VIII ☐ Certain observations on the international application

Date of submission of the demand 13 July 2004 (13.07.2004)	Date of completion of this report 21 February 2005 (21.02.2005)
Name and mailing address of the IPEA/EP Facsimile No.	Authorized officer Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/EP2003/014715

I. Basis of the report

1. With regard to the **elements** of the international application:*

☐ the international application as originally filed

☒ the description:

pages 6-8, as originally filed

pages _____, filed with the demand

pages 1-5, filed with the letter of 10 November 2004 (10.11.2004)

☒ the claims:

pages _____, as originally filed

pages _____, as amended (together with any statement under Article 19

pages _____, filed with the demand

pages 1, filed with the letter of 10 November 2004 (10.11.2004)

☒ the drawings:

pages 1/1, as originally filed

pages _____, filed with the demand

pages _____, filed with the letter of _____

☐ the sequence listing part of the description:

pages _____, as originally filed

pages _____, filed with the demand

pages _____, filed with the letter of _____

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
These elements were available or furnished to this Authority in the following language _____ which is:

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).

☐ the language of publication of the international application (under Rule 48.3(b)).

☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages _____

☒ the claims, Nos. 6-9

☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* *Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).*

** *Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.*

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/EP2003/014715

III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application.

☒ claims Nos. 2-5

because:

☐ the said international application, or the said claims Nos. _____ relate to the following subject matter which does not require an international preliminary examination *(specify)*:

☐ the description, claims or drawings *(indicate particular elements below)* or said claims Nos. _____ are so unclear that no meaningful opinion could be formed *(specify)*:

☐ the claims, or said claims Nos. _____ are so inadequately supported by the description that no meaningful opinion could be formed.

☒ no international search report has been established for said claims Nos. 2-5 .

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

☐ the written form has not been furnished or does not comply with the standard.

☐ the computer readable form has not been furnished or does not comply with the standard.

V. **Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims		YES
	Claims	1	NO
Inventive step (IS)	Claims		YES
	Claims	1	NO
Industrial applicability (IA)	Claims	1	YES
	Claims		NO

2. Citations and explanations

(1) Prior art

Reference is made to the following documents:

D1: EP-A-0 505 738 (GEN ELECTRIC) 30 September 1992

D2: DE 73 26 694 U (WILDEN KG) 13 December 1973

D3: FR-A-2 308 223 (PERSICOT MARIUS) 12 November 1976

D4: WO 02/059936 A (THERMOCERAMIX LCC; GLENN WILLIAM A (US); MAGNANT GARY P (US); ABBOTT) 1 August 2002

D5: US 4496131 (YANG) 29 January 1985.

(2) The present application does not meet the requirements of PCT Article 33(1) because the subject matter of claim 1 is not novel within the meaning of PCT Article 33(2). Irrespective of the objection owing to the lack of novelty of claim 1, the present application also does not meet the requirements of PCT Article 33(1) because the subject matter of claim 1 does not involve an inventive step within the meaning of PCT Article 33(3). The reasons are given below.

2.1) Lack of novelty, claim 1

Document D1 (the references between square brackets [...] relate to document D1) discloses, for an injection moulding machine for the production of injection-moulded parts, an injection-moulding tool having a cavity to which a cooling circuit and heating elements are assigned [D1: figure 5a]:

- a mould core [D1: figure 5a, claims 10-15, see claims 1 and 10: "a core having a surface with the general contour of the part to be molded"],
- the mould core having a thermoceramic coating [D1: figure 5a, reference sign 24, column 6, lines 14-38, see also line 24].

It should be noted that the ceramic coating disclosed in document D1, which is heated by the application of a high-frequency field, is considered a thermoceramic layer [D1: reference sign 24, column 6, lines 14-38, see also line 24]. Document D1 therefore discloses all the features of claim 1 and consequently claim 1 is not novel.

2.2) Lack of inventive step, claim 1

Irrespective of the objection owing to lack of novelty, claim 1 also does not involve an inventive step. The reasons are given below.

Claim 1 of the present application contains the following features of an injection-moulding machine for the production of injection-moulded parts using an injection-moulding tool having a cavity to which a cooling circuit and heating elements are assigned:

F1.1: a mould core

F1.2a: a heating element is inserted into the mould core or (an optional feature)

F1.2b: the mould core has a thermoceramic coating.

a) Features F1.1 and F1.2a: mould core with inserted heating element

Document D2 discloses an injection-moulding tool having a cavity to which a cooling circuit and heating elements are assigned, "wherein each mould half of the plastic injection mould has at least one cooling water channel and an electric heating cartridge in the area of the inside of the mould wall" [D2: page 3, paragraph 2]. It is routine practice in the prior art for at least one mould half to be in the form of a mould core, depending on the geometry of the injection-moulded parts to be produced. To a person skilled in the art wishing to obtain the advantages achieved in document D2 it would therefore have been obvious to insert an electric heating cartridge into a mould half configured as a mould core. In this way a person skilled in the art would have arrived at a device according to claim 1 without exercising inventive skill.

Since in the prior art it is routine practice for at least one mould half to be in the form of a mould core, depending on the geometry of the injection-moulded part, the fact that the example of the injection-moulding tool shown in figure 2 of document D1 represents two similar mould halves would have been irrelevant to a person skilled in the art.

Irrespective of the objections raised above, reference is also made to document D3 [D3: figures 1-3]. Document D3 discloses the preamble of claim 1, wherein according to

figure 3 no heating element is inserted into the mould core. However, to a person skilled in the art it would be obvious to also insert a heating element into the mould core if, owing to its size, the heat dissipation, that is to say, heat capacity, of the mould core is significant and if the mould core is large enough to permit the insertion of a heating element. In doing so a person skilled in the art would therefore arrive at a device according to claim 1 without exercising inventive skill.

b) Feature F1.1, optional feature F1.2b: thermoceramic coating

Document D4 discloses an injection-moulding tool having a cavity to which a cooling circuit and heating elements are assigned, the cavity being provided with a thermoceramic coating [D4: page 25, line 7; page 17, line 24, to page 18, line 7, claim 39]. As already indicated in point 2.1a), it is routine practice in the prior art for at least one mould half to be in the form of a core, depending on the geometry of the injection-moulded parts to be produced. To a person skilled in the art wishing to achieve the same advantages as those obtained in document D4, it would therefore have been obvious to also use a thermoceramic coating according to document D4 for a mould half in the shape of a core. In doing so a person skilled in the art would therefore arrive at a device according to claim 1, without exercising inventive skill.

Irrespective of the objection raised above, reference is further made to document D5, which discloses an injection-moulding tool having a cavity to which a cooling circuit and heating elements are assigned, the mould core being provided with a thin, heatable sheet [D5: figure 2, reference signs 34, 10', 74, 38; column 3, lines 40-49,

abstract]. As regards the thermoceramic coating, document D4 describes the advantage of better control of the solidification process [D4: page 18, lines 3-4: "to better control the solidification process"]. For a person skilled in the art wishing to obtain the same advantages it would therefore be a routine design measure to incorporate this feature into the mould core described in document D5 and hence to arrive at a device according to claim 1, without exercising inventive skill.